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ABSTRACT

This chapter traces the development of education in Mexico and describes recent reforms and current organization of the Mexican educational system. During the colonial period, Catholic religious orders created numerous educational institutions and established the first university (1551). Following independence, education was taken over by the Mexican government (1833), but educational development was disrupted by subsequent struggles between Conservatives and Liberals, war with the United States, and invasion by France. Following expulsion of the French (1867), Benito Juarez' government established the nonreligious, free, and obligatory aspects of education. During the era of Porfirio Diaz (1876-1910), notable ministers of education expanded primary and secondary schooling, supported women's education and higher education, established dozens of normal schools, and effected progressive federalization of instruction. After the Revolution (1910), increased attention was given to illiteracy, rural education, and the education and social integration of indigenous peoples. The present structure of the Mexican educational system is based on: (1) Articles 30 and 31 of the Constitution; (2) the National Agreement for the Modernization of Basic Education, 1992, a massive reform that decentralized the system, restructured and modernized curricula and educational practices, and increased teacher salaries and support for professional development; and (3) the General Law of Education, 1993. Detailed descriptions are provided for each level of education: initial education for children aged 45 days to 3 years and their mothers; preschool education, including kindergarten; primary education (grades 1-6); secondary education (grades 7-9); media superior (preparatory) education (2-3 years); higher education, technological education, and postgraduate study in public and private universities and technological institutes. Teacher education and adult education in literacy and job skills are also described. Contains 26 references. (SV)

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CHAPTER 3

Education in Mexico: Historical and Contemporary Educational Systems

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To meet the challenge of educating children who have recently arrived from Mexico or who are involved in a seasonal rotation between the United States and Mexico, it is important for U.S. educators to have a current and historical perspective on the education system of Mexico. The first half of this chapter describes the history and conditions of different periods in the evolution of Mexico's education system, beginning in colonial times and continuing up to the present time. Education in Mexico, like education everywhere, has undergone various reform movements as different factions have gained political power. Readers will see, however, that Mexico's system has grown steadily to include ever greater numbers of children and adults, educating them to ever higher levels.

The second half of this chapter describes the current organization of Mexican schools, which has undergone a massive restructuring since 1992. It is a complex and comprehensive system. The chapter is organized to describe its scope, beginning with preschool up through postgraduate university education.

Historical Background

Colonial Times

The development of education in Mexico during colonial times has reflected the country's political development. The Spanish conquest of 1521 markedly influenced Native educational institutions; during colonization, education was used by Spain as an instrument of domination to nurture political dependency among Natives. Throughout this period, Mexico's educational system was in the hands of the Catholic clergy. Education developed among the Natives and Mestizos within some of the religious orders, including the Dominicans, Franciscans, Augustines, and Jesuits. These religious orders acquired great ascendancy of influence in the middle and upper classes of the New Spain society (Salvat, 1974, Vol. 5; pp. 166, 167, & 174; Solana, Cardill Reyes, & Bolanos Martinez, 1982, p. 13).

The religious orders, especially the Jesuits and Dominicans, created numerous educational institutions. The Jesuits were dedicated particularly to the study of the humanities; the Dominicans, to the arts and theology (Salvat, 1974, Vol. 5 pp. 166-167).

Educational advances quickly demanded the foundation of a university and, beginning in 1526, efforts were initiated to obtain authorization from the Spanish monarchy. In 1551, with the appropriate approval, the University of Mexico became the first university of the Americas. In 1570, it acquired the title of Royal University and was given the right to use the shield of the guns of Castille and León, and, in 1579, Pope Clemente VII issued a Bull (a solemn papal letter) that changed its name to Royal and Pontifical University (Salvat, 1974, Vol. 5, p. 178).

Independence

Mexico's post-independence history is characterized by the struggle of two opposing political groups—the Centralists and the Federalists, later known as the Conservative and Liberal parties.

The Liberals sought to take away Catholic clerical control of the educational system and place it in the hands of the government. With this in mind, Liberal Vice President Gómez Farías founded in 1833 the Public Guidance for the Federal District and Federal Territories. For the first time in Mexico, public education was controlled by the government, with administration of municipal schools centralized in Mexico City. This arrangement preceded the subsequent establishment of the Education Ministry (Barbosa, 1972, p. 27; Larroyo, 1986, p. 253; Solana et al., 1982, p. 22).

These measures caused the rebellion of Conservative forces, which, headed by Antonio de Santa Anna, dismissed Gómez Farías in 1834 and impeded implementation of his project. After that, the struggle between

Liberals and Conservatives continued, further complicated by the separation of Texas in 1836 and the war with the United States in 1847 (Larroyo, 1986, p. 253: Salvat, 1974, Vol. 7, p. 251; Solana et al., 1982, p. 22).

The Reform (Reforma) Movement

Antonio de Santa Anna, a picturesque character in Mexican history, manipulated the problems between the Conservative and Liberal parties for his own gain, and ascended to the presidency on seven separate occasions. In 1844, during one of his presidencies, he named educator Manuel Baranda Minister of Justice and Public Instruction. Baranda authored the General Plan of Studies and, for the first time, teaching methods and school organizational structures were consigned to legislative norms (Larroyo, 1986, p. 251).

Once again, a comprehensive educational project was forgotten when a group of young Liberal politicians—among them Benito Juárez—rebelled and pursued a total reform of the country. In 1856, this group was able to reunite the legislators, who proclaimed a new constitution in 1857. Among the rights proclaimed in this constitution was the right to learn. In October of the same year, the Liberal president, Comonfort, informed Congress that the Normal School for Teachers had been established (Barbosa, 1972, p. 27; Solana et al., 1982, p. 23).

New conflicts impeded the development of educational institutions. The first of these conflicts was the War of Three Years (1858-1860) between Liberals and Conservatives. During this struggle, Mexico had two presidents: Zuloaga, a Conservative, and Juárez, a Liberal. During the three years that the war lasted, Juárez and his collaborators put together the Reform (Reforma) Laws, one of which established the separation of church and state, eliminating religious instruction from public education (Solana et al., 1982, p. 26).

Although the Liberals triumphed, the country enjoyed only a short period of tranquility, as Mexico was invaded by France in 1864. France wanted to create an empire to oppose the growing power of the United States, and imposed an emperor on Mexico: the Austrian Maximilian of Hapsburg. The French intervention and the reign of Maximilian (1864-1867) constituted a parenthetical period in the history of Mexican education. Although the emperor developed his Law of Public Instruction, the brevity of his government did not allow him to carry it out (Solana et al., 1982, pp. 26-27).

When Maximilian was defeated in 1867, the government of Benito Juárez once again took over the education of the country, establishing three education characteristics that continue to this day: Education in Mexico is nonreligious, free, and obligatory (Barbosa, 1972, p. 29; Larroyo, 1986, pp. 274-275; Solana et al., 1982, p. 32).

One of the first steps taken by Juárez was to proclaim in December of 1867, the Organic Law of Public Instruction in the Federal District, elaborated by Martínez de Castro, Minister of Instruction; and Gabino Barreda, a distinguished positivist. This law established the unity of the country in instruction and declared primary education free and obligatory. That same year, the Secondary School for Young Ladies, The National Preparatory School, and the Academy of Sciences and Literature were founded. Provisions also were made for studies such as medicine, law, agriculture, engineering, and fine arts in other schools. This project culminated with the Law of the Public Instruction of the Federal District, published in 1867 and modified in 1875 (Barbosa, 1972, p. 28; Larroyo, 1986, pp. 273-274; 276-277; Salvat, 1974, Vol. 8, p. 22).

Transition of the Educational Reform to Porfirioism

Beginning in 1867, and continuing through the first presidential period of Porfirio Díaz (1876-1880), Mexican leadership was heavily influenced by the doctrine of positivism. Leaders worked to apply the methods employed in the natural sciences, especially the techniques of experimentation. Ignacio Ramírez, designated in 1876 to work out the complicated question of education of the country, impressed on his work a sensible mixture of his liberal ideals and those of the positivist doctrine (Larroyo, 1986, pp. 302-303; Solana et al., 1982, Vol. 8, p. 122).

With Ramírez, education received a great boost: the spread of primary and secondary instruction was broadened; the importance of the preparation of women and of higher education were confirmed; and, for the first time, official attention was given to indigenous instruction. The work of Ramírez extended into other fields of education: he founded libraries and scholarships, fomented popular education, protected the fine arts, and fought to incorporate the indigenous population into the life of the nation (Barbosa, 1972, p. 75; Larroyo, 1986, pp. 302-303; Solana et al., 1982, p. 46).

The Porfiriato (Díaz's Government)

Ramírez collaborated with President Porfirio Díaz until an illness retired Ramírez from public life in 1877. The work that he initiated was continued, during "Porfirioism," with a brilliant generation of educators. Among the most outstanding are two ministers of public instruction, Joaquín Baranda and Justo Sierra.

During the early years of this period, education in Mexico was enriched by the contributions of two prominent educators: Enrique C. Rébsamen and Enrique Laubscher. In the state of Veracruz, these two produced the first important essays on the theory and practice of education. To demonstrate their theories, they founded in 1883 the Model School of Orizaba, and

some years later, the Veracruzana Normal School of Jalapa. These institutions made Veracruz the original site of one of the most important education reforms in Mexico during the nineteenth century (Barbosa, 1972, pp. 92-93; Larroyo, 1986, pp. 313,319-326; Solana et al., 1982, pp. 55-56). Rébsamen and his students directly influenced the organization of education in 10 states, but within a few years, their "Reforma" extended over the greater part of the country. In 1901, Rébsamen was called to the capitol, where he filled the positions of the Director of Normal Instruction and the Director of the Normal School until 1904, the year of his death (Larroyo, 1986, p. 326).

At the national level, "Porfirioism" was carried out by Joaquín Baranda, minister of education. During Baranda's tenure, normal education made notable advances. He established normal schools to train professors in Guadalajara, Monterrey, Puebla, San Luis Potosí, and Colima. To further increase the supply of professors, other normal schools were founded in Victoria, Tamaulipas (1889); the capital of the country (1889); Oaxaca (1890); and Saltillo, Coahuila (1894). At the end of the century, there existed 45 normal schools in the Republic (Barbosa, 1972, p. 92; Larroyo, 1986, pp. 347-348).

Baranda was aided in his labors by Justo Sierra, an outstanding historian, philosopher, and teacher who, in 1901, became the Subsecretary of Public Instruction. Sierra was able to gain both the cooperation of educators from diverse backgrounds and the backing of all members of Congress. In January 1904, he carefully planned and established the first two kindergartens in the Federal District (Barbosa, 1972, p. 98; Larroyo, 1986, pp. 359-360).

After a brilliant collaboration with Baranda, Sierra filled various offices and, in 1905, initiated the creation of the Office of the Secretaría of Public Instruction and Fine Arts, a position he was the first to fill. After his appointment, he took charge of Primary and Normal, Preparatory, and Professional Instruction in the Federal District and territories; the Fine Arts School of Music and Declamation; the Schools of Arts and Trades, Agriculture, Commerce, and Administration. He carried out the progressive federalization of instruction without affecting the sovereignty of the states, and he insisted on the constant revision of programs and plans of study (Barbosa, 1972, pp. 101-103; Larroyo, 1986, pp. 361-362).

The creation of this Secretaría office conferred great power on Sierra, who, in turn, proposed two main objectives. First, he worked to transform primary education from instruction that simply dispenses knowledge to a system for developing in the child new forms of thinking (Barbosa, 1972, p. 108; Larroyo, 1986, p 366). Second, he aimed to establish continuity in the Mexican educational system, including higher education. To this end, he

obtained the support of President Díaz and Congress and founded, in 1910, the National School of Higher Education to train professors in secondary and professional education. In the same year, he also led the effort to reorganize the National University of Mexico as a lay university, and charged the school with purposes different from those carried out during its time as a Pontificate University (Barbosa, 1972, p. 107; Larroyo, 1986, pp. 370-371).

The unification of the national educational system was advanced through a series of national assemblies designed to bring educators up to date. Sierra actively participated in all of these activities, and the last of the assemblies took place in September 1910 (Barbosa, 1971, p. 107; Larroyo, 1986, p. 370).

The following month, the Revolution exploded, led by Francisco Madero against the dictator Porfirio Díaz. In a last attempt to prolong his power, the Porfiriato (Díaz's government) produced in that same year laws that established Schools of Rudimentary Instruction, antecedents of rural schools throughout the Mexican Republic. By decree, these institutions were to teach Native people to speak, read, and write Spanish and to do basic arithmetic. When the decree was approved by the Chambers (similar to Congress), Porfirio Díaz and his cabinet presented their resignations. In June 1911, the law was put in place by the interim president, León de la Barra (Barbosa, 1972, p. 115; Larroyo, 1986, p. 401; Solana et al., 1982, p. 113).

The Post Revolutionary Period

One of the first worries of President Madero, when he came into power, was the realization of the Rural Schools Project. However, he considered it necessary to study the situation before launching a project that would have such a profound impact on the indigenous population.

Before the project even got underway, however, political upheaval once again changed the direction of the republic: on February 22, 1913, Madero was assassinated. In the chaos following the President's death, various factions tried to come into power and, consequently, progress in education was abandoned over a long period. Between May 1911 and February 1917, there were 15 different ministers of Public Instruction and Fine Arts (Barbosa, 1972, p. 116).

In 1916, Venustiano Carranza, leader of the group that obtained power, convened Congress in the city of Querétaro to produce a new Constitution. This Constitution was adopted on February 5, 1917. Article 3, dedicated to education, declared that education was to be free and nonreligious. This same stipulation that education be nonreligious applied even to private, primary, secondary, and higher education. No religious corporation, or

minister of any cult, would be allowed to establish or administer schools of primary instruction (Barbosa, 1972, pp. 144-145; Larroyo, 1986, p. 147).

Under the new Constitution, education was decentralized, and the National Office of the Secretaría was eliminated. The municipalities were given responsibility for the control and organization of kindergarten and primary education. The middle schools, normal schools, preparatory, and commercial schools (among others) were placed under the control of the governments of distinct entities (included in these, the Federal District), while control of the National University of Mexico was transferred to a newly created University Department (Solana et al., 1982, pp. 149-150).

It soon became apparent that the decentralized governance plan was not functional. The municipalities lacked resources to build schools, provide furnishings, and pay teachers' salaries. Also, they had difficulty locating persons with the scholarly or pedagogical preparation necessary to carry out the task (Solana et al., 1982, pp. 151-152).

In 1920, the nation was shaken by another assassination: Carranza's. Interim president Adolfo de la Huerta named José Vasconcelos as rector of the National University, and the appointment was confirmed by the new president, Álvaro Obregón (1920-1924). Vasconcelos, a prestigious intellectual, was given broad authority to carry out a comprehensive national education program. To achieve this goal, he created a new Secretaría and succeeded in getting it approved by the Congress in September 1921. The office was called the new Secretaría of Public *Education*, not *Instruction* (as the old office was designated), to signify that the new Secretaría would work toward more than mere instruction, but instead would work to develop students' full potential (Barbosa, 1972, p. 31, 160-161; Solana et al., 1982, p. 158). During Vasconcelos' tenure in the Secretaría, he received President Obregón's full political and economic support.

In the brief period between 1921 to 1924, great emphasis was given to the fight against illiteracy, the growth of rural schools, the creation of libraries, support of arts and crafts, and artistic and scientific interchange with foreign institutes. For Vasconcelos, the educational process should not only develop the full potential of the individual, but should find a way to join the indigenous world with that of the Hispanic. Such a fusion would give birth to the *Mexican* identity and to other national identities of Latin America. Believing that Indians should not constitute a group apart, he thought they needed to mix in and participate, thus creating an integrated Mexican society. To combat illiteracy, not only of the indigenous population but of all Mexicans, intense campaigns were initiated in which specialized personnel and numerous volunteers participated (Larroyo, 1986, p. 482; Solana et al., 1982, pp. 159, 174-175).

In his support for the formation of the essential Mexican identity,

Vasconcelos patronized diverse aspects of the arts. Artists of the stature of Montenegro, Rivera, Orozco, Charlot, and Xavier Guerrero painted murals on public buildings. He also arranged for support to rehabilitate The National Symphony so that it could offer concerts to teachers in the capital and the provinces. Visits by prominent Latin American intellectuals also were promoted. All of this activity took place without neglecting the building of new schools, especially technical schools for men and women (Salvat, 1974, Vol. 9, p. 256; Solana et al., 1982, pp. 176-177).

To stimulate reading, a basic element in people becoming self-taught, classic literature of every era was published, along with teacher guides. These works, sold at very low prices so the people could buy them, were in great demand. During his management, Vasconcelos founded 671 permanent libraries and 21 circulating libraries, thus increasing access to books for people in the provinces (Solana et al., 1982, pp. 179-180).

Rural education, too, received attention and support from a Department of Indigenous Culture, which had the authority to implement its plans. By 1923, basic organizational structures for the establishment and functioning of rural schools were in place, and missionary teachers were selected and charged with equipping local primary schools and delivering primary instruction in areas with small or remote populations. These schools began providing Spanish language instruction and advising, supporting, and orienting the rural populations on social and economic questions. Students cooperated in building school furniture, buildings, and annexes for the learning of trades and updated agricultural practices and for the practice of sports. These schools, apart from being educational centers, soon became places of consultation for everyone in the community, and the schools were renamed *Village Houses*. In 1924, after a tremendous output, Vasconcelos left the Secretaría. At that time, more that 1,000 Village Houses were functioning (Aguilar, 1988; Barbosa, 1972, pp. 164-166; Larroyo, 1986, pp. 404-405; Solana et al., p. 482).

The transfer of power from President Obregón to President Calles was peaceful. Calles had worked as a teacher and favored the springing up of diverse educational institutions to benefit various popular groups. In 1925, the Department of Indigenous Culture changed its name to the Department of Rural Schools, Outside Primary Schools, and Indigenous Cultural Incorporation. The Village Houses were once again called rural schools. Among the purposes of this Department was to develop individuals' abilities to better the conditions of their own lives. Therefore, officials recommended that teachers instruct more through experience than through classroom lectures. Calles also considered it a necessity that each region have its own special program to meet its own needs. As a basis for the participation of the indigenous population, the continuing importance of instruction in

Spanish was conceded but with the stipulation that all grades be part of the instruction (Larroyo, 1986, p. 400).

It is notable that, while the purposes of education remained the same as that stated by preceding governments, Calles increased the budget for rural education and initiated the construction of appropriate buildings. For these new schools, he provided furnishings and large parcels of land for regional crops, hen houses, rabbit hutches, and bee hives (Larroyo, 1986, pp. 405-406, 408).

Calles' presidency (1924-1928) was characterized by his determination to have education reach all the great population centers, both urban and rural. In 1926, cultural missions were initiated and charged with disseminating hygiene practices, giving vaccinations, instructing teachers in rural home medicine and first aid, organizing cottage and regional industries, and giving classes in horticulture, zoology, and rural construction (Barbosa, 1972, p. 181; Larroyo, 1986, pp. 407-409). By 1928, there were more than 5,000 rural schools, 206 urban schools, and 38 kindergartens. During the same period, normal school instruction was intensified. The National School for Teachers, founded in 1924, gained prestige when renowned teachers were invited to teach there (Larroyo, 1986, 484-485).

However, during Calles' presidency, there were constant conflicts in Mexico's capitol between the National University and the Secretaría of Education. The Secretaría of Education struggled for lay instruction; the University pushed to allow for religious control of instruction. To reduce the University's strength, since it controlled the 5 years of preparatory school, Subsecretary Moisés Sáenz separated out from the University responsibility for the first 3 years of preparatory school and with these formed secondary (middle school) education, dependent on the Secretaría of Education (Barbosa, 1972, pp. 17, 177).

Before the end of Calles' term, Obregón tried to get himself reelected but was assassinated in 1928. A provisional president, Portes Gil, and two others filled the period. Conflicts intensified between the authorities of education and those of the universities and, after a student strike, supported by various sectors of the population, the National University obtained its autonomy on July 10, 1929 (Larroyo, 1986, p. 438; Solana et al., 1982, p. 257).

In December 1933, during the Regular Convention of the National Revolutionary Party (PNR), delegates Froylán C. Manjarrez and Alberto Bremauntz proposed a modification to Article 3, replacing the word *lay* with the word *socialist*. At this time, the Secretary of Education and member of the PNR, Narciso Bassols, drew up the new Article that, upon being publicized, provoked a controversy that obligated Bassols to resign in May 1934 (Solana et al., 1982, pp. 267-269).

Notwithstanding strong opposition, the new article was approved by the House Chamber and came into effect on December 1 of that same year, the date that Lázaro Cárdenas occupied the presidency. The text of the Article was as follows:

> Article 3. The education that the State imparts will be socialist and furthermore will exclude all religious doctrine, will combat fanaticism and prejudice, for which the school will organize its instruction and activities in a way that permits the creation of a rational and an accurate concept of the universe and a social life within its youth. Only the government—Federation, State, Municipality—will give primary, secondary, and normal education. Authorization to private schools who wish to give instruction in any of the three previously mentioned must be in accord with the following norms: ...In each virtue, the religious corporations, the ministers of the cults,...will not intervene in any form in primary, secondary or normal schools, nor will they be supported economically (Barbosa, 1972, p. 213); Larroyo, 1986, pp. 492-493; Solana et al., 1982, pp. 274-275).

To plan the new educational curriculum, the Institute of Socialist Orientation was created in 1935 and put in charge of carrying out the new plans, programs, and texts from the preschool level to the professional level. Other responsibilities of this Institute included spreading socialist orientation among the magistrates, doing away with fanaticism, eliminating illiteracy, and preparing teachers to spread culture in indigenous centers (Solana et al., 1982, p. 276).

To improve agricultural methods and organize collective production systems, the Institute designed special courses to lift workers and the rural population from the primary level of instruction up through the highest levels of professional and cultural technology. Assimilation brigades and centers for indigenous education were created. The number of rural schools was increased by 2,200 (Solana et al., 1982, pp. 276-277).

The part of the plan that called for preparation of teachers to spread culture failed. Teachers protested the burden of developing multiple social activities such as organizing assemblies, clubs, committee organizations, and commissions to solicit public services in addition to developing workshops to guide cooperative production. Add to this list fulfilling the academic subject programs, and it is easy to deduce that teaching became an unpopular profession, increasingly so after numerous rural teachers were attacked physically by those opposed to this type of education (Solana et al., 1982, pp. 281, 287).

One of the positive initiatives of the Cárdenas period was the creation in 1935 of the National Polytechnic Institute (IPN), one of the most important

educational institutions in the country. Initially geared to agricultural and industrial preparation, today it embraces all disciplines (Cooms, 1991, p. 91).

In 1936, the Department of Indigenous Matters, the University of the Laborer, and the Institute for the Preparation of Administration of Secondary (Middle School) Instruction were created; in 1942, these were transformed into the Normal Superior School. The Department of Artistic and Historic Monuments was converted into the Institute of Anthropology and History. Distinguished Spanish intellectual refugees in Mexico were retained, due to the internal struggle in Spain (1936-1939). For the orphaned children of the Spanish war, the Boarding School of Spain-Mexico was founded in Michoacán (Barbosa, 1972, pp. 224-225; Larroyo, 1986 p. 494; Solana et al., pp. 323-324).

After the Cárdenas period, subsequent governments modified plans and programs until, gradually, the socialist features disappeared. Cárdenas' successor, President Avila Camacho, appointed Torres Bodet, a distinguished intellectual, to the position of Minister of Education. Bodet prepared, without any publicity, a modification of Article 3. President Camacho sent the modification to Congress in December 1945. It was approved by the two Chambers and by the legislators of the Mexican states and was published in the Official Diary, December 30, 1946 (Barbosa, 1972, pp. 236-237; Solana et al., 1982, pp. 323-324).

The text of the Article, after the reform of 1946, read as follows:

> The education given by the state-federation, states, or municipalities, will develop harmoniously all the faculties of the human being and will nurture in this being at the same time the love of Country and the consciousness of international solidarity, in independence and in justice.
>
> I. Guaranteed by Article 24, the freedom of beliefs is the criterion that will guide education, which will maintain itself completely apart from any religious doctrine and base itself on the results of scientific progress, thus fighting against ignorance and its effects, fanaticism and prejudice (Political Constitution of the United States of Mexico with Reforms and Additions, 1969).

In each of the following presidential periods, education underwent modifications—some of little consequence; others, of great scope. During the period of President Alemán (1946-1952), the following institutions were created: the National Institute of Fine Arts (1946), the Indigenous Institute (1948), the National Institute of Youth (1950), and the National Autonomous University of Mexico City was constructed (1952), with various branches throughout Mexico City. These branches included the

Teaching Institute and Administrative Research and Services; Physical Education; Spectacle Sports; and Residential, Parks, and Horticultural Nurseries. As of 1995, this University enrolls more that 100,000 students. (Larroyo, 1986, pp. 534-535, 548; Solana et al., 1982, pp. 344-346).

Alemán was succeeded by Ruiz Cortines (1942-1958), who was succeeded by López Mateos (1958-1964), who again appointed Torres Bodet as Minister of Education. Bodet took the position with reserved gratitude, recounting his accomplishments during the Camacho administration.

In 1960, Torres Bodet presented his Plan of Eleven Years, which had as its principal end the solution to the growing demand for national quality primary education. Meeting the demand required the construction of new classrooms, rehabilitation of the existing ones, and teacher preparation. Although Bodet's work was difficult, upon handing over the Secretaría to his successor, in 1964, he considered that his plan had been 83 percent completed in the urban areas and 62 percent completed in rural areas (Larroyo, 1986, pp. 546-547; Solana et al., 1982, pp. 369-371).

In respect to secondary education, the National Technical Council of Education (reformed in 1958) revised and organized the plans and programs of study. The Council reduced the number of academic hours to 22 weeks and added 14 hours of technological activities weekly so that students who felt obligated to abandon their studies (a frequent situation in the country) could count on a basic preparation for a life of work (Barbosa, 1972, p. 36; Larroyo, 1986, p. 380).

A measure received with enthusiasm by persons of scarce economic resources was the 1958 creation of the National Commission of Free Text Books for Elementary Schools. From 1960 to 1964, the Commission distributed 107,155,755 books and workbooks and 494,255 teachers' manuals. This measure sought to make a primary education truly free by making both instruction and books available at no cost to families. From 1964 on, the Secretary of Education continued producing and distributing free texts in primary schools across the country (Larroyo, 1986, pp. 547-548; Solana et al., 1982, p. 367).

In 1973, during the presidency of Luis Echeverría, a large select group of teachers and specialists from diverse fields gathered in Chetumal and approved a plan of studies for basic secondary education, based on Article 25, Section II of the Federal Law of Education. The new plan called for two basic areas of study: (1) Social Sciences (including history, economics, social geography, and civics) and (2) Natural Sciences (including physics, chemistry, biology, and physical geography) (Agreement 16 363 of Chetumal, August 31, 1974).

Several sectors who favored the study of individual academic disciplines protested energetically. After many meetings of teachers and parents, it was agreed that the director of each school would decide if the

curriculum would be presented by content areas or by academic disciplines. In the end, about half of all secondary schools worked with content areas and the other half with academic disciplines. These arrangements remained in place until 1992, the year that the present reform came into effect as proposed by ex-president Salinas de Gortari (1988-1994).

In January 1991, the Secretary of Education, Manuel Bartlett-Díaz, installed a National Commission for Consultation on the Modernization of Education. Community, local, regional, state, and national meetings were held over 3 months in which teachers, parents, researchers, experts, representatives of social sectors, and authorities participated. More than 65,000 papers were given. The Program for Educational Modernization was derived from this study. It is the foundation document for initiating a comprehensive change of plans and programs of basic education of the country (Program for the Educational Modernization 1989-1994).

In 1990 the Program was field tested in a limited number of preschool education, primary, and secondary (junior high) schools. The analysis of the obtained results and the ideas contributed by teachers and educational authorities guided the elaboration of a document titled *National Agreement for the Modernization of Basic Education (ANMEB)*, signed May 18, 1992.

To carry out this comprehensive plan to modernize Mexico's schools, the Congress modified two Constitutional Articles—the 30th and 3lst—and approved a General Law of Education, enacted in July 1993 (hereafter referred to as the Articles and the Law). With the *National Agreement*, the last stage of the reorganization of plans and programs of study was initiated (Political Constitution of the United States of Mexico, Editorial Trillas, 1994 Edition; Federal Law of Education, Daily Office of the Federation, July 13, 1993).

After publication of the first plans and programs in 1993, the Council proceeded to develop its first series of free textbooks for preschool and primary instruction, didactic guides, and supplementary materials for teachers.

Legal Basis of the Present Educational System

The present structure of the Mexican Educational System is based on (1) Articles 30 and 31 of the Constitution, (2) the *National Agreement for the Modernization of Basic Education (ANMEB)*, and (3) the General Law of Education. Each of these components is described in this section.

Constitutional Articles 30 and 31

Article 30. Every individual has the right to receive an education. The government—Federation, States, and Municipalities—will impart

preschool, primary, and secondary education. Primary and secondary education are obligatory.

I. Guaranteed by Article 24 on liberty of thought, said education will be lay and, because of that, it will remain completely apart from any religious doctrine.

III. . . . [t]he Federal Executive will determine the plans and programs of study for primary, secondary, and normal education for the entire Republic....

IV. All the education that the state imparts will be free.

VI. Private schools will be able to impart education in all of its types and modalities. . . .[t]he State will grant and decline recognition of official value on the studies carried out in private schools.

VII. The Universities and the other institutions of higher education upon which the law bestows autonomy, will have the authority and the responsibility of governing themselves, and will realize their purposes to educate, investigate, and diffuse culture in accordance with the principles of this article, respecting the liberty of professorial appointments, research, and the free examination and discussion of ideas....

Please note that this Article

- guarantees the right of all individuals—regardless of age, nationality, or social condition—to a free education, provided by the state;
- establishes both primary *and* secondary (junior high) as parts of basic instruction; unlike previous law, which stipulated only preschool and primary levels (Official Diary of the Federation, March 5, 1993; Political Constitution of the United States of Mexico, Editorial Trillas, 10th Edition, 1994, pages 10 and 11);
- assigns to the Federal Executive (through the Secretaría of Education) the authority to determine the program of study for basic and normal education while allowing states some latitude, as long as their plans conform to the basic criterion established by the Federation; and
- allows private schools to carry out education, the only requirement being that they obtain the necessary authorization from the State.

Another constitutional article modified by the Union Congress was the 31st, reproduced in part below.

Article 31. Obligations of all Mexican citizens to assure that their children or pupils attend public or private schools, in order to obtain

primary and secondary education and to take an active part in the military, according to the terms established by law.

Article 31 institutes the responsibility of parents to endeavor to get for their children basic education to such an extent that their obligation does not stop until the pupil finishes secondary education. This requirement is important in Mexico, because numerous parents of scarce economic resources abstain from sending their children to school and obligate them to work. At present, these parents are outside the law (Political Constitution of the United States of Mexico, Trillas Editorial, Tenth Edition, 1994, p. 55).

National Agreement for the Modernization of Basic Education (ANMEB)

The ANMEB was signed on May 18, 1992, by Ernesto Zedillo, then Minister of Education (now President of the country). It represents the agreement of various interest groups within the country to reach common objectives through federal education and to share among the federation and the states the technical, administrative, and financial responsibilities. It is, furthermore, an instrument of planning that requires a restructuring of the educational system and diverse reforms in the organization of the office of Secretaría of Public Education (SEP, *National Agreement for the Modernization of Basic Education*, 1992).

This Agreement contains three watershed changes:

1. decentralization of the educational system,
2. reformulation of content and educational materials, and
3. reevaluation of the teaching function.

Each of these changes is discussed below.

Decentralization of the educational system. As a first step toward decentralization of the federal educational system, Zedillo transferred to the state governments the administration of preschool education and primary (including indigenous education), secondary (junior high) school, normal, and special institutions. This includes the management of around 100,000 real estate properties with furnishings, 513,000 teaching posts, 115,000 administrative posts, 2.9 million class hours, and 13.5 million students (SEP, General Management of Information, Executive Report 1992, p. 131).

This decentralization, accomplished with great effort, came up against a lack of understanding and the resistance of some local educational authorities. These problems, fortunately, were overcome. The agreement established several sets of obligations:

Obligations of the Federation—
- to carry out Article 30 of the Constitution,
- to expedite general standards of education,
- to formulate plans and programs, and
- to evaluate the educational system.

Obligations of the States—
- to direct state schools;
- to assume responsibility for the technical, administrative, and financial aspects;
- to form collegiate/professional councils; and
- to propose regional criteria.

Obligations of the Municipalities—
- to create municipal education councils, and
- to maintain and equip schools.

Obligations of the federation and state teams—
- to recognize the National Syndicate of Educational Laborers (SNTE) as officials of labor relations for the teachers association;
- to stimulate social participation;
- to assign greater resources to the most needy entities and regions;
- to strengthen the capacity of the teacher, parent, and student organizations; and
- to create school educational councils.

Reformulation of educational content and materials. To carry out the second watershed change of the *National Agreement*, consultation and debate forums were conducted during the 1992-93 school year. The purpose of the forums was to solicit input to optimize planning for new programs of study and for textbooks. Adjustments were made to the requirements at the primary and secondary levels for instruction by content areas versus instruction by academic disciplines (SEP, General Management of Information, Executive Report 1993, p. 134).

Among these changes, the most significant include
- reform of educational content and curriculum through the total renovation of plans and programs of study and textbooks;
- application of a new preschool educational program;
- application of a new emergent primary education program;
- increase in instructional hours in mathematics and Spanish at both primary and secondary levels;
- discontinuation of the content areas of instruction approach in social sciences, and adoption of the study of geography, history, civics, and related but independent disciplines at the primary and secondary (junior high) school levels;
- continuation of the content area of natural sciences at the primary level

but adoption of the discipline approach to physics, chemistry, and biology at the secondary (junior high) level.
- design of a new school calendar that guarantees 200 days of classes during the school year;
- renovation of methods and processes of instruction;
- articulation of the distinct educational levels;
- updating of educational processes in accordance with scientific and technological advances; and
- reaching agreement with the Secretary of Communications and Transport and establishing an impetus for long-distance, televised learning through the use of satellite communication and parabolical antennas (SEP, Executive Report, 1993).

Reevaluation of the teaching function. The economic situation of teachers had deteriorated over the years to the point that, in some municipalities, their salaries were only a little above minimum wage. This situation frequently obligated teachers to meet their financial needs by taking other jobs and neglecting their students. Other teachers simply abandoned the teaching profession (SEP, Executive Report, 1993, p. 134).

To alleviate teachers' financial distress and to respond to their requests for professional development, several actions were taken: (Advances in Educational Modernization, May, 1994, p. 16; Executive Report, 1993, p. 134).

- implementation of a system for teacher training in each state;
- reform of entrance requirements to a normal school program, such that the certificate of preparatory (equivalent to a [U.S.] high school diploma) is required;
- application of a modernized educational program;
- improvement in teachers' salaries, as of May 1993, to the tune of a 70 percent increase;
- initiation of a Teacher Training Career program to stimulate teacher academic improvement, organized as a career ladder that permits teachers to increase their level of income according to evaluation criteria such as length of service, academic level, upgraded training, preparation, and professional development (80 percent of all teachers have participated);
- endowments to school book collections to support the performance of the staff; and
- implementation of a special program to promote the development of housing for teachers.

The General Law of Education. The General Law of Education came into effect July 14, 1993, replacing the old Federal Law of Education. The new law clearly specifies the rights and obligations of all educational agencies (Official Diary of the Federation of July 13, 1993).

Some of the rights and obligations it contains are outlined below.

- The new law provides support for Article 30's guarantee of a free, secular, basic education for all Mexicans as an obligation of the government.
- With regard to the federalization of education, the law establishes the norms for relations between the federation and the states and municipalities. It confers on the states the responsibility for the technical, administrative, and financial aspects of its educational institutions, without losing sight of the objectives of federal education. This measure permits strengthening of national unity without weakening regional developments. To support regional development, educational services are set up that are responsive to the needs and characteristics of each region.
- In view of the fact that the quality of the educational process is one of the principal purposes, the school calendar is extended to 200 school days. The Law also confirms the right of parents to be informed periodically about the level of progress of their children.
- The law recognizes the experience of some persons on the basis of their knowledge, abilities, and skills, thus giving official certification if they meet the evaluation standards.
- The law broadens the social participation in education by supporting the role of parents in the educational process, creating school advisory boards, seeking more involvement of various communication mediums, and inviting society to participate in the production of free textbooks.

Present Structure of the Educational System

Education in Mexico comprises the following educational stages: basic preschool, primary, secondary (junior high), prep school, higher education, and postgraduate (Federal Law of Education, Official Diary of the Federation of July 13, 1993; SEP, Mexico, Advances of the Educational Modernization, May, 1994). Each level is described in this section.

Basic Education

Basic Education comprises initial, preschool, primary, secondary, and special education. In addition, it includes physical, artistic, and cultural education.

Initial Education

The needs of approximately 9 million children under the age of 4 and their mothers (increasing numbers of whom are employed) in urban, rural, and indigenous communities spawned the creation of a new type of informal schooling. These new "schools" pursue two objectives: to empower mothers in the care and attention of their children and to help mothers adapt new parenting methods to their home environments through diverse activities.

This initial education is dedicated to children age 45 days to 3 years. It is imparted in the Centers of Infantile Development (CENDI) (created through a constitutional mandate) in federal, state, dependency, and private institutions. In 1992, 142,000 infants attended; however, the enormous demand would have required a supply of up to 216,000 more slots.

The programs, support materials, and educational resources for infants and their parents are designed to prepare children for preschool education. To this end, the curriculum has been infused with content about ecology, hygiene habits, and nutrition, of great importance especially in the rural and indigenous communities. Taking into account the importance of parental participation, content that encourages attentiveness to infants has been included in the adult education programs.

In addition to stimulating children's distinct abilities, the suggested methods nurture expressiveness, creativity, and artistic sensibility. For older infants, didactic packages tied to preschool education have been produced.

At present, to broaden participation, efforts are underway to solicit participation of various communications media to help promote public awareness. Other efforts are underway to obtain the cooperation of those international organizations interested in the well-being of infants (SEP, Performance Report, 1993).

Preschool Education

In Mexico, public preschool education consists of 2 years of instruction and constitutes the first contact of the child with formal education. To enter kindergarten, a child must have reached his or her fourth birthday. In many private kindergartens, where a foreign language is taught along with the native language, preschool education takes 3 years. During the last year, called pre-primary, children alternate between languages and learn elements of reading and writing in both. In the 1993-94 school year, 2.9 million children were enrolled in Mexico's preschool education program. They were taught by over 116,000 teachers in over 52,000 schools.

The content of the new preschool program of studies is taught in relation to the child's natural and social environment and seeks to tie this educational stage to what comes later. With this objective, the proposed activities emphasize mathematics, oral and written language, artistic sensibility, nature study, and development of psycho-motor abilities (SEP, Fundamentals of the Theoretical-Methodology of the Preschool Educational Program, 1992, pp. 11-23).

Following the first year of implementation, an evaluation was carried out in 19 states of the Republic. The results provided useful information in revising the content of the pedagogical guides used during the 1992-93

school year. Approximately 687,000 copies of the program were distributed to teachers (SEP, Performance Report, 1993).

Examples of program materials include a book for children, *My Work Notebook (Mi Cuaderno de Trabajo)*; didactic packages integrated with games of primary graphics; modules about musical instruments; cassette tapes; a music book; and other material that stimulates creativity through simple crafts. Together, the material is designed to support the physical, affective, intellectual, and social development of students (SEP, Performance Report, 1993, 287).

In 1992, an innovative information database and computer literacy program was established in 141 kindergartens in the Federal District. After 2 years of experience, this effort to address an aspect of education that had lagged behind was considered successful; in 1994, 178 Micro-SEP computers were installed and software manuals distributed, which would benefit more than 32,000 students. (SEP, Office of General Information, Performance Report, 1993, 288).

One of the concerns of the Secretaría of Public Education has been the integration of isolated indigenous groups, some of whom have resisted abandoning their traditional ways of life. The Secretaría initiated the teaching of Spanish as a national language in the preschool groups without displacing the distinct Native languages and traditional customs. The basic elements of Spanish are easily assimilated by children of this age (SEP, Performance Report, 1993, 287).

For this task, bilingual teachers were counted on, most of whom were Natives of the indigenous communities. These mentors received a *Manual for the Indigenous Teacher* and were prepared through special courses. The effectiveness of the *Manual* was evaluated in the states of Jalisco, Michoácan, and Puebla (The Office of General Information, Performance Report, 1993, 288).

Rural areas also received special materials. In addition to previous preparation, teachers received 5,876 work guides and didactic packages for 59,114 students (The Office of General Information. Performance Report, 1993, p. 288).

One of the commitments of the Secretaría of Public Education in this national education reform effort is to support the professional development of teachers. In 1993, 126,911 teachers attended training workshops, seminars, and a course on Preschool Teaching-Learning methodology carried out through the General Project of Teaching Empowerment (Office of General Information, Performance Report, pp. 288-290).

Themes covered in the preschool course included fundamentals of technique and methods in preschool education; early childhood development in the affective, social, intellectual, and physical domains; program organization; and the social function of the school.

Primary Education

Until recently, basic and primary education were synonymous in Mexico. Primary school, divided into lower (first, second, and third years) and higher (fifth and sixth) grades constituted the base of the educational system. In many communities across the country, it was the only education to which inhabitants had access.

Today, primary school continues to carry out its important role as the bridge between preschool and secondary. During the 1993-94 school year, nearly 14.5 million students were taught by over 488,000 teachers in more than 85,000 Mexican primary schools.

Among main goals of the plan of studies for primary students are

- to strengthen reading, writing, and oral expression—intellectual abilities considered basic to the development of permanent learning and communication capacities;
- to learn mathematical concepts and apply them to problems of everyday life;
- to obtain basic knowledge needed to comprehend natural phenomena, especially the relationship of hygiene and health care, protection of the environment, and rational use of natural resources;
- to acquire fundamental knowledge of history and geography, thus gaining an understanding of other countries and of Mexico in particular;
- to acquire an appreciation of the students' rights and responsibilities and to practice these values in their relations with others;
- to appreciate and enjoy music, painting, dance, literature, and other artistic achievements of humanity; and
- to enjoy physical exercise and sports.

The contents outlined above are considered fundamental to the development of the whole student. Teachers are encouraged to make sure that, along with these necessary abilities for permanent learning, the acquisition of knowledge is associated with the exercise of intellectual abilities and meditation (SEP, Plan and Programs of Study 1993, Elementary, p. 14).

For the 1993-94 school year, new plans and programs of study were designed and implemented in first, third, and fifth grades. These changes necessitated the development of new materials and free textbooks. Specialists were invited to compete to rewrite textbooks. New curriculum has now been implemented in all six grades.

The development of the new plan requires an annual calendar of 200 working days and 4-hour class days, which translates into 800 annual hours—150 hours more than previous cycles. The distribution of instructional time is shown in Table 1 (SEP, Plan and Programs of Study 1993, p. 14).

Notice that beginning in the first grade, special attention is given to Spanish (45 percent of class time), and mathematics (30 percent). In these

Table 1
Distribution of Work Time (1993 Plan)
First and Second Grades

Subject	Weekly hours	Annual hours
Spanish	9	360
Mathematics	6	240
Knowledge of the Environment (Natural Sciences, History, Geography, Civic Education)	3	120
Artistic Education	1	40
Physical Education	1	40
Totals	20	800

Source: SEP Plan and programs of study 1993, p. 14

two grades, under the rubric of Knowledge of the Environment, the natural sciences, history, geography, and civic education are integrated. The last three subjects are an integrated study of the community, municipality, and political entity where the students live.

In third, fourth, fifth, and sixth grades, Spanish and mathematics continue to receive the most attention, as shown in Table 2. The focus of earlier Spanish programs was the study of grammatical structure and linguistic forms. The central purpose of the new programs is the development of the communication capacity in speaking and writing (SEP, Plan and Programs of Study 1993, Elementary, pp. 14 and 15).

The mathematics program develops the capacity to recognize, plan, and solve problems; anticipate and verify results; estimate results of computation, and measure and use measurement design and computational instruments (SEP, Plan and programs of study 1993, Elementary, p. 52).

The contents of the natural sciences are grouped in five thematic axes: living beings; the human body and health; the environment and its protection; matter, energy and change; and science, technology, and society. From third grade on, 3 hours a week are set aside for the natural sciences because of their importance in the preservation of health and the protection of natural resources and the environment (SEP, Plan and Programs of Study 1993, Elementary, p. 74).

An important modification was the development of an integrated social sciences unit, which replaced fragmented geography, history, and civics

Table 2
Distribution of Work Time (1993 Plan)
Third to Sixth Grades

Subject	Weekly hours	Annual hours
Spanish	6	240
Mathematics	5	200
Natural Sciences	3	120
History	1.5	60
Geography	1.5	60
Civic Education	1	40
Artistic Education	1	40
Physical Education	1	40
Totals	20	800

Source: SEP Plan and programs of study 1993

lessons taught previously (SEP, Plan and programs of study 1993, Elementary, pp. 91-140).

For the 1993-94 academic year, the new Program for Updating Teachers consisted of four courses addressing problems in teaching Spanish, mathematics, and history, and three courses about classroom planning (SEP, Office of General Information, Chapter on Education, p. 133).

In the school period that began in September 1993, primary school students and teachers received more than 113 million books, state monographs, and teacher guides. Of these, nearly 46 million were free textbooks.

A Program of Environmental Protection was developed in the 1993-94 school year in Mexico City as an extracurricular activity. Its purpose was to create an awareness in students of the important role they could play in reducing contamination in various cities of the country, especially in Mexico City, Guadalajara, and Monterrey.

The literacy services in the indigenous communities focus on reading and writing in Spanish, arithmetic elements, and basic Mexican history and geography. These services are offered to children and adults who request them. Outstanding students who wish to continue their studies are given economic help. The literacy campaigns have helped lower illiteracy, which currently stands at about 8 percent of the population (SEP, Office of General Information, Chapter on Education, p. 138).

In coordination with specialists in 20 indigenous languages and dialects,

books were prepared for first- and second-grade instruction in reading and writing in indigenous languages. Content was tailored to match specific regional conditions. At the same time, a support manual on the educational process of indigenous primary schooling was distributed to teachers. This manual was based on test programs conducted in the states of Chiapas, Chihuahua, Hidalgo, and Morelos. Approximately 152,000 copies were used for instruction in Spanish; 101,000 in indigenous languages (SEP, Office of General Information, Performance Report, p. 289).

To serve populations with special needs, the Primary Program for Migrant Children was developed to benefit 10,000 children of migrant agricultural laborers. These students migrate within 14 states of the Republic. [See chapters 6 and 8 for more information about programs sponsored by the Mexican Secretaría of Public Education that serve migrant students who travel into the United States.]

Secondary (Junior High) Education

In contrast to primary, the secondary (middle school) level occupied a place of little importance in earlier eras. Although the 1865 Law of Instruction includes language about secondary education, organized on the style of the French lyceums of that era (covered in 7 or 8 years), it was not until 1925, after two presidential decrees, that the secondary school in Mexico was born (Larroyo, 1986, 461-462).

The 1993 reform resulting from Article 30 of the Constitution conferred great importance on secondary education by including it as an obligatory component in a basic education in Mexico. That reform created for the government an obligation to increase the number of secondary schools available to serve those students who, upon finishing primary school, acquire the right and obligation to go on to secondary education through the ninth grade (SEP, Program for Educational Modernization 1989-1994, p. 46).

The decentralization of the educational system meant that the states provided for 81.2 percent of the demand for secondary education; the Federation, 10.5 percent; and private schools, 8.2 percent (SEP, Education, p. 133).

During the 1993-94 school year, student enrollment stood at 4,311,800, indicating that many students passing out of primary school did not enter middle school. Even though the enrollment in middle school registered a growth of 1 percent that year, educational authorities are adopting measures to better publicize this service. Among other strategies, groups of teachers visit primary schools to inform sixth-grade students and their parents about the importance and obligation of continuing their studies (SEP, Education, pp. 133-134).

As in primary school, the program of study emphasizes Spanish instruction, which receives 5 class hours weekly at all three grade levels. The program consists of four axes: spoken language, written language, literary recreation, and reflection on the language (SEP, Plan and Programs of Study 1993, Secondary p. 20).

Mathematics, too, receives 5 weekly class hours. The themes of the program are grouped in five areas: arithmetic; algebra; geometry; probability; and, in ninth grade, trigonometry (SEP, Plan and Programs of Study 1993, Secondary, p. 37).

Sketch of the Subjects of the Three Grades of Secondary Education and Number of Weekly Hours

Subjects	first (7th grade)	second (8th grade)	third (9th grade)
Spanish	5 hours	5 hours	5 hours
Mathematics	5 hours	5 hours	5 hours
World History	3 hours	3 hours	
History of Mexico			3 hours
General Geography	3 hours		
Geography of Mexico		2 hours	
Educ. Orientation			3 hours
Civics	3 hours	2 hours	
Elective Subject			3 hours
Biology	3 hours	2 hours	3 hours
Intro to Physics & Chemistry	3 hours		
Physics		3 hours	3 hours
Chemistry		3 hours	3 hours
Foreign Language	3 hours	3 hours	3 hours
Developmental Activities			
Artistic Expression & Appreciation	2 hours	2 hours	2 hours
Physical Education	2 hours	2 hours	2 hours
Technological Education	3 hours	3 hours	3 hours

Source: SEP, Plan and Programs of Study 1993, Secondary, p. 16

In previous years, the natural sciences course consisted of the rudiments of biology, physics, chemistry, and physical geography. Two courses now

have been established for each of those disciplines. Introductory physics and chemistry courses tie in the natural sciences of the first year of secondary (7th grade) with physics and chemistry courses in the second (8th grade) and third (9th grade) years (SEP, Plan and Programs of Study 1993, Secondary [Middle School], p. 13).

Under the old program, social sciences integrated history, geography, and civics. In the current plan, these disciplines are studied separately. (SEP, Plan and Programs of Study , 1993, Secondary, p. 14).

With regard to foreign language studies, only two are offered at the secondary level: English, preferred by the majority of schools for obvious reasons, and French. Three hours weekly are dedicated to these languages in public schools. Some of the purposes for studying a foreign language include

- development of an attitude of respect for the ideas of others,
- appreciation for one's own culture, and
- the acquisition of linguistic basics that allow students who go on to higher education the choice of advancing in their knowledge and command another language (SEP, Plan and Programs of Study 1993, p. 133).

Developmental activities in the secondary program consist of artistic expression and appreciation (music, drawing, and painting), physical education (sports and gymnasium), and technological education. The latter consists of diverse activities from which each school may select in accordance with the region in which it is located (SEP, Plan and Programs of Study 1993, Secondary [Middle School], p. 14.)

As in the lower levels of schooling, the modification of the secondary education program called for the development and publication of new texts. One difference from the primary program is that the secondary texts are not free. These texts are produced by private publishing houses. The authors write their works according to the programs put forth by the Secretaría of Public Education (SEP). The texts are then revised by a Findings Commission that takes into consideration accuracy, currentness, and the efficacy of the teaching-learning processes employed.

The approved books appear in the SEP catalog. The teachers select one or more texts. To acquaint educators with the new texts, SEP acquired 800,000 books of each subject from publishers and gave them to the teachers of seventh and eighth grades. In addition, each teacher received a didactic guide to the materials in his or her specialty (SEP, Education, p. 134).

In the 1993-94 school year, the Introduction to Computers in Basic Education program was initiated. Five computer centers were set up in secondary schools (SEP, Education, p. 134).

Other new measures recently implemented include remedial summer

courses; standardized exams for students who failed one to three subjects; and scholarships for students in rural communities.

Special and Private Schools

The majority of private Mexican schools must comply with the same established programs as the public ones do. Those that teach with a foreign language must dedicate extra hours to that language apart from the obligatory hours of the official school program. Some solve the problem with additional afternoon hours; others, within the regular hours, teach some classroom subjects in the foreign language and others in Spanish (Information supplied by Professor Homero Sánchez Nájera, Inspector General of Secondary Education of the SEP).

Other private schools, such as el Colegio Americano (The American School), Liceo Francés (the French Lyceum), Colegio Alemán (German School), Colegio Suizo (Swiss School), Colegio Irlandés (Irish School), Colegio Japonés (Japanese School), and many others are governed by bicultural agreements that allow these schools to deliver instruction in accordance with the educational programs of the sponsoring country. Mexican students who plan to continue their studies in other countries can attend these schools. The certificates issued by these schools are valid in Mexico (information supplied by professor Homero Sánchez Nájera, Inspector General of Secondary Education, SEP).

Students who divide their time between Mexico and another country are advised to continue their studies in one of the aforementioned schools, because the official Mexican schools accept students from other countries only when the courses taken are recognized and the students take the exams that otherwise correspond to these courses.

Media Superior (Preparatory) Education

Students who complete their secondary education may continue their studies in one of numerous preparatory schools in Mexico. Some of these are under the direction of the SEP, and others are directed by the Universidad Nacional Autónoma de México (UNAM) [The National Autonomous University of Mexico]. The Instituto Politécnico Nacional (IPN) [The National Polytechnical Institute] relies on Technical Schools, equivalent to the middle schools, and along with Centros de Estudios Científicos, Tecnológicos e Industriales de Servicio (CETIS) [Centers of Scientific Studies, Technologies and Manufacturing Service], equivalent to the preparatories. The IPN studies are incorporated to SEP.

In the college preparatory school, programs vary between 2 and 3 years in duration. In almost all institutions of this type that function in Mexico City, courses taken during the first 2 years are the same for all students. In

the third year, students must decide if they wish to continue with university studies or technical studies, and in accordance with the choice made, they receive a list of required subjects and electives (UNAM, Plan of Studies, 1989).

In the majority of preparatory schools, students select from the following four areas: physical-mathematics, chemical-biological, economic-administrative, and humanities. Each area prepares students for a number of professions and specialties. For example, corresponding to the area of Physical-Mathematics are professions such as physicist, astronomer, mathematician, engineer, and actuary.

SEP's registries report that in the 1992-93 school year, 1.77 million students were taught by 115,343 teachers in 4,812 preparatory schools. The following year saw an increase in enrollment of 60,000 students (SEP, Education, pp. 134-135).

The growth in enrollment was due, in part, to the creation of 128 new schools, especially in the science-related fields. Sixteen new vocational programs have been started in the areas of broadcasting, land and cattle management, administration, rural accounting, development of livestock farming, horticulture, hospital maintenance, hotel management, restaurants, and tourism. This growth is also due to targeted efforts to better inform secondary school graduates including promotional campaigns conducted through various communication media and orientation programs carried out by the National System of Educational Orientation (SEP, Education, p. 135).

The expansion system, which allows workers to finish their studies in a profession, served 19.7 percent more students in 1993-94 than in the preceding cycle. This growth may be due to the restructuring of the National Commission for Planning and Programming of Preparatory Education. This restructuring was done to integrate these programs with the National Commission for the Planning of Higher Education. Plans and programs of study were modified through consultation with different social sectors, and include the contributions of specialists from diverse fields of knowledge. During the 1992-93 school year, by means of a modular system of curriculum development, 119 plans and 1,499 programs of study were developed; of those, 69 plans and the entire number of programs of study are functioning (SEP, Education, p. 135).

Higher Education

In the higher education system (SES), there exists major differences among the public universities of the capital and those of the states, and between the leading and private universities. These differences relate to means, quality of facilities and faculties, and prospects for development and expansion.

Higher education is divided into three principal subsystems:

- 36 public universities with 64 percent of the total enrollment at the level of baccalaureate degree (1989 figures) (most enjoy administrative autonomy);
- a national network of 87 regional technological institutes, with 15 percent of the total enrollment (most operate under SEP controls);
- 35 private universities of diverse means and quality, as well as approximately 120 small institutions with programs of remedial studies. This last group represents 16 percent of the total enrollment. Some universities are autonomous, while others depend on SEP (Cooms in SEP and Foundation for Economic Culture, 1991 p. 25).

After the seventies, the higher education system began decentralizing until, presently, almost all Mexican states have state universities and many have technological institutes. This decentralization has resulted in an increased SES enrollment outside of Mexico City. Previously, 70 percent of the students enrolled in universities in Mexico City. Recent statistics show that, although the number of students has grown in Mexico City, the proportion in relation to the rest of the country has diminished by about 24 percent (Cooms, 1991, pp. 25-26).

Some of the universities and technological institutes have acquired considerable prestige. The Universities of Guadalajara, Jalisco, and the Technological Institute of Monterrey in Nuevo León attract ever-increasing numbers of students from the rest of Mexico and from various U.S. and Central American locations.

SEP has jurisdiction over all other levels of education, including planning and budgeting. The Subsecretary of Higher Education and Scientific Investigation and the General Director of Higher Education handle relations with the universities. The Subsecretary of Research and Technological Education controls the system of public technological institutions (Cooms, 1991, p. 27).

Since 1929, The National Autonomous University of Mexico (UNAM) has been independent in developing its plans and programs of study, and in deciding its budget distribution. The annual student fees are symbolic (20 Mexican pesos) and, despite various attempts to increase them, student protests supported by some political groups have stopped the adoption of increases, more needed as each year passes. The government subsidy represents a major portion of the monies coming into UNAM. This subsidy is increased by private donations. Many universities throughout Mexico follow UNAM's model; others have created their own systems.

Among the public universities, the Universidad Autónoma Metropolitana (UAM) [The Autonomous Metropolitan University] located in Mexico City has a special place. The UAM is organized academically by depart-

ments, different from the UNAM, organized by schools in the Spanish and French style. The UAM was planned by a group of the most severe critics of the UNAM, who proposed to create an institution inspired by the organization of the universities of the United States and the United Kingdom. The UAM enrolls about 50,000 students, and has a large, full-time faculty who teach and conduct research activities in undergraduate and graduate programs (Cooms, 1991, p. 28).

Mexico also has numerous private and technological universities. Some universities follow the model of the UNAM; others, that of the UAM. Various universities stand out for the quality of their teaching, including the Iberoamericana, Panamericana, Anáhuac, and LaSalle, among others. El Instituto Tecnológico Autónomo de México (ITAM) [The Autonomous Technological Institute of Mexico], one of the most prestigious in the country, is financed by the students' college fees and by private contributions. Nevertheless, in Mexico, there does not exist an effective system of scientific research at the university level. Of the 400 universities in existence, only 40 carry out investigative research.

To enter into the university, students must have finished preparatory school with a bachillerato (preparatory or high school diploma). Many of the private universities have their own preparatory schools; students in these schools do not have to pass entrance exams if they continue their studies in the same university. Due to a student strike, the students of the public preparatories no longer present exams of admission to the UNAM. On the other hand, the entrance exam is required in the private universities that do not have preparatory programs (Cooms, 1991, p. 29).

In contrast to the UAM, where a large number of teachers work full-time, only 25 percent of teachers employed by the UNAM devote all their time to teaching. This is because many of the teachers are highly accomplished scholars who devote a great part of their time to their professions. In private universities, the majority of the professors works on an hourly basis (Cooms, 1991, p. 29).

Technological Education

In 1958, when the Subsecretary of Higher Technical Education was put in charge of the coordination and development of technological education in Mexico, two areas of activities were designated: (1) to direct the Instituto Politécnico Nacional (IPN) [The National Polytechnic Institution] as an institution of a higher academic level and (2) to direct other technological institutions, among them the technical secondary schools, the Centers of Scientific and Technological Studies, and the Regional Technological Institutes. This subsecretary has changed names with each presidential administration; currently the office is called the Subsecretary of Technical Studies, under the Secretary of Public Education (SEP, 1995).

The IPN endeavors to form professionals in technical careers that are needed for Mexico's development. Divided into cycles, these consist of complete teaching of the careers that they attempt, from prep school to professional to postgraduate work (Solana et al., 1982, p. 480).

The unique four-level Mexican system of technological education consists of schools that have varying levels of preparatory and higher education, ascending to the National Polytechnic Institute (IPN), which takes in a net of 87 smaller technological institutes (Cooms, 1991, p. 91).

As mentioned earlier, the IPN was founded by President Cárdenas in 1935. Its establishment responded to the President's call for an institution dedicated primarily to teaching technical and scientific subject matter that would have practical application to the needs of a country in development. At the onset, notable differences existed between the IPN's plans of study and those of the UNAM, but the diversification of the plans of study of both institutions has narrowed the differences. The IPN has broadened its scope into areas such as medicine, economics, social sciences, and administration and offers doctoral degrees in many fields, which were in the past exclusively the UNAM's domain. The UNAM, in turn, has entered some technological areas (Cooms, 1991, pp. 91-92; Solana et al., 1982, p. 480).

Postgraduate

Postgraduate education consists of specialization studies and master's and doctorate degree programs. These can be accomplished in the UNAM, the UAM, the IPN, and in various private universities.

More than 55,000 students were enrolled in these programs in 1993-94. During this period, 199 plans and programs of study were brought up to date, of which 94 correspond to the university area and 105 to the technological area. The UNAM started the university postgraduate system, with eight integrated programs. For its part, the IPN created the doctorate in Metallurgy and Materials and the specialization in Thermal Engineering (SEP, Education, p. 137).

An important institution supporting postgraduate study is in the Consejo Nacional de Ciencia y Tecnología (CONACYT) [The National Council of Science and Technology], which stimulates research through scholarship programs. In 1993, it gave approximately 650 scholarships, representing a 30 percent increase from the previous year. The educational sector, in turn, granted 3,555 scholarships to carry out postgraduate studies in national institutions and 649 for studies in foreign countries (SEP, Education, p. 142).

Normal Education

All the information contained in this section was obtained in direct consultation with students and teachers of the Escuela Nacional de Mae-

stros (The Normal School of Teachers), the magisterial profession, and with the scholarship holders of the Universidad de las Américas (The University of the Americas).

Normal education has undergone numerous reforms throughout the political history of the country and, despite its importance, has received less support than other professions. Thanks to the decentralization of education, the whole country now has normal schools.

The basic teaching profession is studied in Mexico in the Escuela Nacional de Maestros (the National School of Teachers), in the state normal schools, and in some Mexican private schools. In the first years after the foundation of the National School of Teachers, so little importance was given to the career of *professor* that only a middle school certification was sufficient to enroll in this institution and, after 3 years of studies, students received the title of Professor of Elementary Instruction.

At present, to enroll in the same school, the bachillerato is required (graduation from preparatory school). The studies last 4 years and, after an intense student teaching experience with primary groups beginning in the fourth semester, the degree of Licenciatura (Baccalaureate) in primary education is obtained.

Students who obtain the Licenciatura are certified to receive appointments as teachers of primary instruction. If they wish to aim higher, they can enroll in the Escuela Normal Superior (Higher Normal School) or the Universidad Pedagógica (the Pedagogic University). In the Normal Superior institutes, specialties are offered such as Spanish, mathematics, natural sciences, social science, and foreign language. Graduates of this institution acquire the degree of Licenciatura (Baccalaureate) in secondary education and fill secondary teaching posts throughout Mexico. The studies in the Pedagogical University are designed to result in a master's or doctorate degree.

Since 1992, as an incentive to improve teaching, the Educational Modernization Agreement established a plan for the reevaluation of teachers in front of their peers at all the instructional grade levels. The teachers attend the Centers of Teacher Modernization and, if they complete the stringent requirements, obtain an annual economic benefit. The Secretary of Public Education, in cooperation with the Bank of Mexico, grants to distinguished teachers scholarships to obtain the master's or doctorate degrees in education. Scholarship holders, apart from having obtained a superior grade-point average, must take an admission exam at the university of their choice.

The National Agreement for the Modernization of Basic Education (ANMEB), established in May 1992, states that responsibility for material and personnel resources needed to provide normal education and teacher

training services would be transferred from the federal government to the states (SEP, Education, p. 136).

Adult Education

In Mexico, adult education is fundamental. According to the 1990 census, 12.4 percent of Mexicans could not read or write. Adult education is the charge of the National Institute for the Education of Adults (INEA). This Institute develops activities related to illiteracy, primary and secondary education, and work requirements for Mexicans older than 15 who have never gone to school or who did not finish their basic education (SEP, Education, p. 137).

During the 1993-94 school year, the INEA taught 1.13 million adults to read, of whom 8.3 percent were indigenous persons; 73.7 percent were rural inhabitants, and 18 percent were urban inhabitants. To extend the coverage, two systems were used: (1) a radio literacy service transmitted radio programs at fixed times and repeated them during the day; and (2) study groups were formed and provided with audiocassettes and cassette players. To help adults exercise reading and writing skills, workshops were conducted that produced diverse types of materials (SEP, Education, p. 138).

Primary and secondary classes for adults were attended by approximately 1.56 million people, of whom 70 percent had some previous primary schooling and 30 percent had some middle schooling. Through an agreement to promote adult education in industries of the private sector of goods and services, 400,000 workers were included in the primary and secondary school program. Taking into consideration the special needs of these groups, appropriate educational materials and texts were adopted. Materials developed for adults in rural areas comprise six state biographies, 26 regional monographs, and 22 books of history (SEP, Education, p. 138).

Summary

The decentralization process will continue as each state plans and carries out its own particular educational programs to meet state and local needs. The states are allowed latitude as long as they conform to basic criteria established at the Federal level. SEP specifies standards and values, thereby controlling i.e., the national character of Mexico's educational system. The state Secretaries of Education, school administrators, professors, teachers, and others will need time to adjust to a more autonomous system in contrast to Mexico's highly regulated and centralized educational system of previous years.

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